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(54) ENABLING GRANULAR DISCRETIONARY ACCESS CONTROL FOR DATA STORED IN A CLOUD COMPUTING ENVIRONMENT

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(52) **U.S. Cl.**

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USPC **726/26**; 726/27; 726/28; 726/29; 726/30; 707/781

(58) **Field of Classification Search**

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See application file for complete search history.

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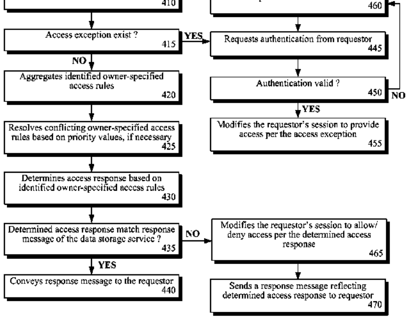
(57) ABSTRACT

Enabling discretionary data access control in a cloud computing environment can begin with the obtainment of a data request and response message by an access manager service. The response message can be generated by a data storage service in response to the data request. The access manager service can identify owner-specified access rules and/or access exceptions applicable to the data request. An access response can be determined using the applicable owner-specified access rules and/or access exceptions. Both the response message and the access response can indicate the allowance or denial of access to the requested data artifact. The access response can be compared to the response message. If the access response does not match the response message, the response message can be overridden to express the access response. If the access response matches the response message, the response message can be conveyed to the originating entity of the data request.

18 Claims, 5 Drawing Sheets


400
Obtains data request and response message determined by the data storage service 405
Identifies applicable owner-specified access rules and/or exceptions for data request 410
Access exception exist ? 415
YES
NO
Aggregates identified owner-specified access rules 420
Resolves conflicting owner-specified access rules based on priority values, if necessary 425
Determines access response based on identified owner-specified access rules 430
Determined access response match response message of the data storage service ? 435
NO
YES
Conveys response message to the requestor 440
Informs requestor of invalid authentication 460
Requests authentication from requestor 445
Authentication valid ? 450
NO
YES
Modifies the requestor's session to provide access per the access exception 455
Modifies the requestor's session to allow/ deny access per the determined access response 465
Sends a response message reflecting determined access response to requestor 470